REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application.

Claims 1-12, 14-24 and 26-28 are now present in this application. Claims 1, 8, 17, 26, 27 and 28 are independent.

Reconsideration of this application is respectfully requested.

Rejections under 35 U.S.C. §103

Claims 1, 18, 17 and 26-28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,337,520 to Jeong et al. (hereinafter, "Jeong") in view of U.S. Patent 6,433,842 to Kaneko et al. (hereinafter, "Kaneko") and further in view of U.S. Patent 6,310,674 to Suzuki. This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

In rejecting claims under 35 U.S.C. §103, it is incumbent on the Examiner to establish a factual basis to support the legal conclusion of obviousness. See, In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the

pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. E-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. Note, In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

A suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999).

Jeong discloses an LCD structure having a drain line made of Molybdenum or a Molybdenum alloy – see col. 7, lines 16-30.

The Office Action admits that Jeong does not disclose a pixel electrode made of an amorphous transparent conductive film or a polycrystalline transparent conductive film for preventing a generation of a galvanic effect.

In an attempt to overcome these deficiencies in Jeong, the Office Action turns to Kaneko and Suzuki.

Kaneko, in col. 5, lines 34-65, discloses that, in the case where a layered structure is used for drain lines, a third conductive layer may be formed under the aluminum layer to secure contact with the underlying semiconductor layer, and, in that case, amorphous indium tin oxide (a-ITO) or indium zinc oxide (IZO) that allows for use of a weak-acid etchant is preferably used as the material of the pixel electrodes so that the aluminum alloy is prevented from being damaged during etching of the pixel electrodes.

Applicants respectfully submit that this teaching of Kaneko is not relevant to, nor is obvious to apply to, Jeong because this teaching of Kaneko is limited to situations in which a third conductive layer is formed under an aluminum layer to secure contact with the underlying semiconductor layer. This type of situation is not present in Jeong. In this regard, reference is made to Fig. 10 of Jeong, in which the underlying semiconductor layer 520 is directly connected to drain electrode 620, and pixel electrode 800 is directly connected to drain electrode 620. Moreover, Kaneko has a layered drain electrode (layers 21 and 22) whereas Jeong has a single layer electrode 620. In other words, the Kaneko situation is not the same as the Jeong situation.

In fact, as noted above, Jeong's drain line is made of Molybdenum or a Molybdenum alloy. However, Kaneko discloses using a dual layered drain electrode, where Cr layer 21 is the bottom layer and Mo layer 22 is the top layer. In col. 5, Kaneko discloses using amorphous ITO pixel electrodes with aluminum drain electrodes but using polycrystalline ITO pixel electrodes with molybdenum alloy drain electrodes (col. 5).

Because Jeong discloses a Mo or Mo alloy drain electrode, if Kaneko's teaching were followed, one would use polycrystalline ITO for pixel electrodes in Jeong, and would not use amorphous ITO pixel electrodes, as claimed.

Accordingly, the claimed invention is not obvious based on Jeong and Kaneko.

Under such circumstances, the Office Action has not made out a *prima facie* showing that a skilled worker would be properly motivated to modify Jeong to provide amorphous ITO as the pixel electrode.

The Office Action then turns to Suzuki, which discloses using amorphous ITO pixel electrodes instead of polycrystalline ITO pixel electrodes to permit the use of weak etching acids. Suzuki contains no disclosure of using the ITO pixel electrodes to reduce or eliminate a galvanic effect, and certainly does not teach varying thickness of the ITO layer in any manner whatsoever, let alone for reducing a galvanic effect. In fact, Suzuki discloses only a single thickness of 800 Angstroms for the ITO pixel electrode layer thickness. The disclosure of a single thickness ITO layer coupled with the complete failure to discuss galvanic effect problems is evidence of the complete failure of Suzuki to appreciate providing an ITO pixel electrode layer of sufficient thickness to prevent galvanic effects.

Moreover, because the base reference, Jeong, uses Mo or Mo alloy drain electrodes, and because Kaneko teaches not using amorphous ITO pixel electrodes in such a situation, it would not be obvious to modify Jeong-Kaneko to provide amorphous ITO pixel electrodes in Jeong. In other words, one of ordinary skill in the art would not look to Suzuki to modify the Jeong-Kaneko reference combination because that reference combination teaches away from using amorphous ITO pixel electrodes with Jeong's drain electrode materials.

Accordingly, it would not be obvious to modify Jeong-Kaneko in view of Suzuki because of the explicit teaching in Kaneko to use amorphous ITO pixel electrodes with Al or Al alloy drain electrodes, and to use polycrystalline ITO pixel electrodes with Mo or Mo alloy drain electrodes.

Furthermore, with respect to claim 17, the burden of establishing the existence of a method of preventing a galvanic effect is different than the burden associated with establishing the existence of something being inherent in a device. Because none of the three applied references discloses or suggests the concept of preventing galvanic effects, it most certainly does not disclose or suggest a method for preventing a galvanic effect in general, let alone by providing a film of sufficient thickness to do so.

With respect to claims 26-28, none of the three references discloses varying the thickness of the ITO pixel electrode to prevent generation of a galvanic effect in general, or caused by a stripper.

Reconsideration and withdrawal of this rejection of claims 1, 8, 17 and 26-28 is respectfully requested.

Claims 2-7, 9-12, 14-16, and 18-24 stand rejected under 35 U.S.C. §103(a) as unpatentable over Jeong, Kaneko and Suzuki, applied as in the

rejection of claims 1, 8, 17 and 26-28, and further in view of U.S. Patent 5,135,581 to Tran. This rejection is respectfully traversed.

With respect to claims 2-5, 9-12 and 18-22, Applicants respectfully submit that even if it were proper to modify the Jeong-Kaneko-Suzuki reference combination as suggested in view of Tran (which is not the case) that the resulting modified reference combination would not meet or render obvious the claimed invention, at least for the reasons presented in the above traversal of the rejection of claims 1, 8, 17 and 26-28.

Furthermore, the alleged motivation to modify the improper base reference combination in view of Tran is given as "reducing visible light absorption and achieving more stable characteristics." Unfortunately, the Office Action fails to provide objective evidence in the applied prior art of a need, or the knowledge of a need to "have reduced visible light absorption or more stable characteristics" in the claimed invention.

Thus, this reason is based completely on improper hindsight reconstruction of the claimed invention based solely on Applicants' disclosure.

Moreover, "reducing visible light absorption and achieving more stable characteristics" is nothing more than a broad conclusory statement about the teaching of multiple references, and, standing alone, is not "evidence" of proper

motivation to the base reference combination (which itself is improper). See In re Dembiczak, cited above.

Accordingly, Applicants respectfully submit that this rejection of claims 2-5, 9-12 and 18-22 is improper and should be withdrawn.

With respect to claims 6, 7, 15, 16, 23 and 24, the Office Action notes that Jeong discloses pixel electrode thicknesses of from 300 Angstroms to 2000 Angstroms, and that range is said to overlap the recited thickness range of from 500 to 2000 Angstroms. The Office Action fails to demonstrate that this thickness range of the polycrystalline ITO pixel electrode would inherently prevent galvanic effects. Something that is inherently disclosed must necessarily occur, not just possibly or probably, but necessarily. Under the doctrine of inherency, if an element is not expressly disclosed in a prior art reference, the reference will still be deemed to anticipate a subsequent claim if the missing element "is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Cont'l Can Co. v. Monsanto Co., 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). "Inherent anticipation requires that the missing descriptive material is 'necessarily present,' not merely probably or possibly present, in the prior art." Trintec Indus., Inc. v. Top-U.S.A. Corp., 295 F.3d 1292, 1295, 63

USPQ2d 1597, 1599 (Fed. Cir. 2002) (quoting In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)).

Moreover, the Office Action must present objective factual evidence of this separate and apart from Applicants' disclosure, which cannot properly be used against Applicants. See, In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

The Office Action fails to present any objective factual evidence to support a conclusion that Jeong-Kaneko-Suzuki inherently discloses the claimed invention.

Furthermore, with respect to method claims 18-24, the burden of establishing the existence of a method of preventing a galvanic effect is different than the burden associated with establishing the existence of something being inherent in a device. Because none of the three applied references discloses or suggests the concept of preventing galvanic effects, it most certainly does not disclose or suggest a method for preventing a galvanic effect in general, let alone by providing a film of sufficient thickness to do so.

With respect to claim 14, which is patentable at least for the reasons that claim 8, from which it depends, is patentable, Jeong does disclose a single layer metal pad. However, both Kaneko and Suzuki disclose double layer metal pad structures. It is interesting how the Office Action selectively applies some

teachings of Kaneko and Suzuki while deliberately not applying others, such as the advantages of a two-layer metal pad structure. This selective approach exemplifies the overall improper method of this Office Action applying the secondary and tertiary references to Jeong, the primary reference, in making these rejections. It is fundamentally improper for an Examiner to pick and choose only certain selected elements of one or more references while not applying other features of those same references.

Accordingly, reconsideration and withdrawal of this rejection of claims 6-7, 14-16 and 23-24 are respectfully requested.

Additional Cited References

Because the remaining references cited by the Examiner have not been utilized to reject the claims, but have merely been cited to show the state of the art, no comment need be made with respect thereto.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the

outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Robert J. Webster, Registration No. 46,472, at (703) 205-8000, in the Washington, D.C. area.

Pursuant to the provisions of 37 CFR 1.17 and 1.136(a), Applicants respectfully petition for a one (1) month extension of time for filing a response in connection with the present application. The required fee of $120.00 is attached hereto.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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